

What is claimed is:

1. A method for expressing in a plant a heterologous glycerol-3-phosphate dehydrogenase that is less sensitive to feedback inhibition than wild type glycerol-3-phosphate dehydrogenase, the 5 method comprising the steps of:

providing a vector comprising a DNA sequence encoding a glycerol-3-phosphate dehydrogenase that is less sensitive to feedback inhibition than wild type glycerol-3-phosphate dehydrogenase; and transforming the plant with the vector.

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2. A method according to claim 1, wherein the glycerol-3-phosphate dehydrogenase has a single amino acid substitution which renders it feedback defective, while not significantly altering its catalytic ability.

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3. A method according to claim 1, wherein the glycerol-3-phosphate dehydrogenase is *gpsA2^{FR}*.

4. A method according to claim 1, wherein the DNA sequence comprises a DNA sequence encoding the amino acid sequence listed in SEQ ID 20 NO: 2.

5. A method according to claim 1, wherein the DNA sequence encoding the glycerol-3-phosphate dehydrogenase comprises the sequence listed in SEQ ID NO: 1.

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6. A method according to claim 1, wherein the glycerol-3-phosphate dehydrogenase has the amino acid sequence listed in SEQ ID NO: 2.

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7. A method according to claim 1, wherein the plant is an oil seed bearing plant.

8. A method according to claim 1, wherein the plant is of the genus *Brassica*.

9. A method according to claim 1, wherein the plant is *Arabidopsis thaliana*.

10. A plant expressing a heterologous glycerol-3-phosphate dehydrogenase that is less sensitive to feedback inhibition than wild type glycerol-3-phosphate dehydrogenase.

11. A plant according to claim 10, wherein the glycerol-3-phosphate dehydrogenase has a single amino acid substitution which renders it feedback defective, while not significantly altering its catalytic ability.

12. A plant according to claim 10, wherein the glycerol-3-phosphate dehydrogenase is *gpsA2^{FR}*.

13. A plant according to claim 10, wherein the plant harbours a DNA sequence encoding the amino acid sequence listed in SEQ ID NO: 2.

14. A plant according to claim 10, wherein the plant harbours a DNA sequence as listed in SEQ ID NO: 1.

15. A plant according to claim 10, wherein the glycerol-3-phosphate dehydrogenase has the amino acid sequence listed in SEQ ID NO: 2.

16. A plant according to claim 10, wherein the plant is an oil seed bearing plant.

17. A plant according to claim 10, wherein the plant is of the genus *Brassica*.

18. A plant according to claim 10, wherein the plant is *Arabidopsis thaliana*.

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19. A method for producing a genetically altered plant having altered fatty acid content in its glycerolipids, the method comprising the steps of: providing a vector comprising a DNA sequence encoding a glycerol-3-phosphate dehydrogenase that is less sensitive to feedback inhibition than wild type glycerol-3-phosphate dehydrogenase; and transforming the plant with the vector.

10 20. A method according to claim 19, wherein the glycerol-3-phosphate dehydrogenase has a single amino acid substitution which renders it feedback defective, while not significantly altering its catalytic ability.

15 21. A method according to claim 19, wherein the glycerol-3-phosphate dehydrogenase is *gpsA2^{FR}*.

20 22. A method according to claim 19, wherein the DNA sequence comprises a DNA sequence encoding the amino acid sequence listed in SEQ ID NO: 2.

25 23. A method according to claim 19, wherein the DNA sequence encoding the glycerol-3-phosphate dehydrogenase comprises the sequence listed in SEQ ID NO: 1.

24. A method according to claim 19, wherein the glycerol-3-phosphate dehydrogenase has the amino acid sequence listed in SEQ ID NO: 2.

25. A method according to claim 19, wherein the plant is an oil seed bearing plant.

26. A method according to claim 19, wherein the plant is of the genus 5 *Brassica*.

27. A method according to claim 19, wherein the plant is *Arabidopsis thaliana*.

10 28. A method according to claim 19, wherein the plant glycerolipid has elevated levels of C16 fatty acids.

29. A method for producing a genetically altered plant having increased 15 stress tolerance relative to the wild type, the method comprising the steps of:

providing a vector comprising a DNA sequence encoding a glycerol-3-phosphate dehydrogenase that is less sensitive to feedback inhibition than wild type glycerol-3-phosphate dehydrogenase; and transforming the plant with the vector.

20 30. A method according to claim 29, wherein the glycerol-3-phosphate dehydrogenase has a single amino acid substitution which renders it feedback defective, while not significantly altering its catalytic ability.

25 31. A method according to claim 29, wherein the glycerol-3-phosphate dehydrogenase is *gpsA2^{FR}*.

32. A method according to claim 29, wherein the DNA sequence comprises a DNA sequence encoding the amino acid sequence listed in SEQ ID 30 NO: 2.

33. A method according to claim 29, wherein the DNA sequence encoding the glycerol-3-phosphate dehydrogenase comprises the sequence listed in SEQ ID NO: 1.

5 34. A method according to claim 29, wherein the glycerol-3-phosphate dehydrogenase has the amino acid sequence listed in SEQ ID NO: 2.

35. A method according to claim 29, wherein the plant is an oil seed bearing plant.

10 36. A method according to claim 29, wherein the plant is of the genus *Brassica*.

15 37. A method according to claim 29, wherein the plant is *Arabidopsis thaliana*.

38. A method according to claim 29, wherein the stress is osmotic stress.

20 39. A vector for genetically transforming a plant, wherein the vector comprises a DNA encoding a protein having glycerol-3-phosphate dehydrogenase activity, and the plant, after transforming, exhibits enhanced biosynthesis of glycerol and/or glycerol-3-phosphate.